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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,662	05/01/2006	Takayuki Yokota	1034509-000004	8040

21839 7590 03/06/2008  
BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER
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MCCALISTER, WILLIAM M

ART UNIT	PAPER NUMBER
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4156

NOTIFICATION DATE	DELIVERY MODE
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03/06/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,662	<b>Applicant(s)</b> YOKOTA ET AL.	
	<b>Examiner</b> WILLIAM M. MCCALISTER	<b>Art Unit</b> 4156	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 10 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/1/2006, 6/14/2006</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7-8 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Leinsing (US Patent 5,676,346).

With regard to claim 7, Leinsing discloses a connector comprising: a tubular male joint member (see annotated FIG 5, below); a liquid passage portion (see annotated FIG 5, below) having a liquid passage space defined therein in fluid communication with an interior of said male joint member; a valve body (46,48) disposed fixedly with respect to said male joint member (via supporting protrusions 32) and having a head (24) and a neck (57) interconnecting said head and said liquid passage portion, said neck being thinner than said head, said valve body having a slit (26) extending from a top surface of said head to said liquid passage space, said valve body being made of an elastic material (see reference to “deformable piston” in column 3 line 33); and a housing (16) having a female joint port (18) capable of receiving a tube, said housing being movable in the direction of a central line of said female joint port with respect to said valve body and said male joint member (see analysis of claim 4, below), said housing

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accommodating said valve body therein; wherein when a tube is inserted into and connected to said female joint port, the tube presses said valve body to move said valve body and said male joint member with respect to said housing, and to deform said valve body to open said slit, bringing an interior of the tube and an interior of said male joint member into fluid communication with each other through said slit and said liquid passage space (see column 3 lines 33-43).

With regard to claim 8, Leinsing discloses the housing to have a tapered portion (see annotated FIG 6, below) disposed behind said female joint port (see frame of reference in annotated FIG 6) and having an inside diameter along the width of said slit (inherent when valve body is positioned as shown in FIG 5), said inside diameter being progressively reduced into said female joint port (because member 18 is the female joint port, "into said female joint port" must correspond with frame of reference #2 as depicted in annotated FIG 6, below), and when the tube is connected to said female joint port, the tube presses said valve body to move said valve body into said tapered portion (as depicted in FIG 5), so that said valve body is pressed (axially) and deformed along the width of said slit directly or indirectly by a tapered surface of said tapered portion, thereby opening said slit (see column 8 lines 30-38: if the slit is closed off when forced up into the tapered section, it is open when in the position of FIG 5).

With regard to claim 20, Leinsing discloses the fluid passage space to be of a shape for preventing a liquid from being trapped therein when the liquid flows in said liquid

passage space (the connector as situated in FIG 5 contains no areas in the passage portion where a fluid would collect)..

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-6, 11-13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leinsing.

With regard to claim 1, Leinsing discloses a connector comprising: a tubular male joint member (see annotated FIG 5, below); a liquid passage portion (see annotated FIG 5, below) having a liquid passage space defined therein in fluid communication with an interior of said male joint member; a first female joint port (18) which is capable of receiving a tube (see annotated FIG 5, below); a first valve body (46,48) having a head

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(24) and a neck (57) interconnecting said head and said liquid passage portion, said neck being thinner than said head, said first valve body having a slit (26) extending from a top surface of said head to said liquid passage space, said first valve body being made of an elastic material (see reference to “deformable piston” in column 3 line 33); wherein when a tube is connected to said first female joint port, said first valve body is deformed to open the slit of said first valve body (see column 3 lines 33-39) to bring an interior of the tube and an interior of said male joint member into fluid communication with each other through the slit of said first valve body and said liquid passage space. Leinsing also discloses an inlet port (see annotated FIG 5, below), but does not disclose a second valve body or a second female joint port. However, to avoid contamination and reduce the need for cleaning at the inlet port, one of ordinary skill in the art at the time of invention would have supplemented the inlet port of Leinsing’s connector with a second valve body and second female joint port of the same construction and function as the first valve body and first female joint port, to predictably obtain a connector which creates an airtight seal while connecting to either inlet. (Alternatively, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a second valve and second female joint port, as it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8)

With regard to claim 2, Leinsing discloses the first female joint port and the male joint member to have respective central lines extending substantially parallel to each other.

With regard to claim 3, to decrease manufacturing costs of the modified connector (as set forth in the obviousness analysis of claim 1), one of ordinary skill in the art at the time of invention would have integrally formed the first and second valve bodies (and thereby the liquid passage portion as well), to predictably obtain a connector wherein both valve bodies are fashioned simultaneously from one mold.

With regard to claim 4, Leinsing discloses said first female joint port to be movable in the direction of a central line thereof relatively to the corresponding valve body. (See column 5 lines 57-62 describing member 16 to be received over member 28, i.e. – in the direction of a central line of the valve body. Additionally, taking the valve body as the frame of reference, it is movable with respect to the female joint port because the valve body deforms axially.)

With regard to claim 5, Leinsing discloses a connector comprising: a tubular male joint member (see annotated FIG 5, below), a liquid passage portion (see annotated FIG 5, below), a female joint port (18), a valve body (46,48), and an inlet port. To avoid contamination and reduce the need for cleaning at the inlet port, one of ordinary skill in the art at the time of invention would have supplemented the inlet port of Leinsing's connector with another valve body and female joint port, to predictably obtain a connector which creates an airtight seal during initial connection to both inlets. This modified connector would have comprised: a first female joint port (18 as used with the

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inlet port) and a second female joint port (18) which are capable of receiving a tube (see annotated FIG 5, below); a first valve body (46,48 as applied to the inlet port) disposed in said first female joint port and made of an elastic material (see reference to “deformable piston” in column 3 line 33), said first valve body having a slit (26); and a second valve body (46,48) disposed in said second female joint port and made of an elastic material (see reference to “deformable piston” in column 3 line 33), said second valve body having a slit 26; the central line of said first female joint port and the central line of said second female joint port being skew lines; wherein when a tube is connected to said first female joint port (as a supplemental tube is applied to the inlet port), said first valve body is deformed to open the slit of said first valve body to bring an interior of the tube and an interior of said male joint member into fluid communication with each other through the slit of said first valve body (see column 3 lines 33-43); and when a tube is connected to said second female joint port (see annotated FIG 5, below), said second valve body is deformed to open the slit of said second valve body to bring an interior of the tube and the interior of said male joint member into fluid communication with each other through the slit of said second valve body (see column 3 lines 33-43).

With regard to claim 6, the modified connector set forth in the analysis of claim 5, above, would have allowed the first female joint port to be movable in the direction of the central line thereof relatively to said first valve body, and said second female joint port to be movable in the direction of the central line thereof relatively to said second valve body. (See analysis of claim 4, above.)



With regard to claims 11 and 16-19, Leinsing discloses the fluid passage space to be of a shape for preventing a liquid from being trapped therein when the liquid flows in said liquid passage space (the connector as situated in FIG 5 contains no areas in the passage portion where a fluid would collect).

With regard to claim 12, see obviousness analysis of claim 3 above.

With regard to claim 13, see analysis of claim 4 above.

U.S. Patent

Oct. 14, 1997

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5,676,346

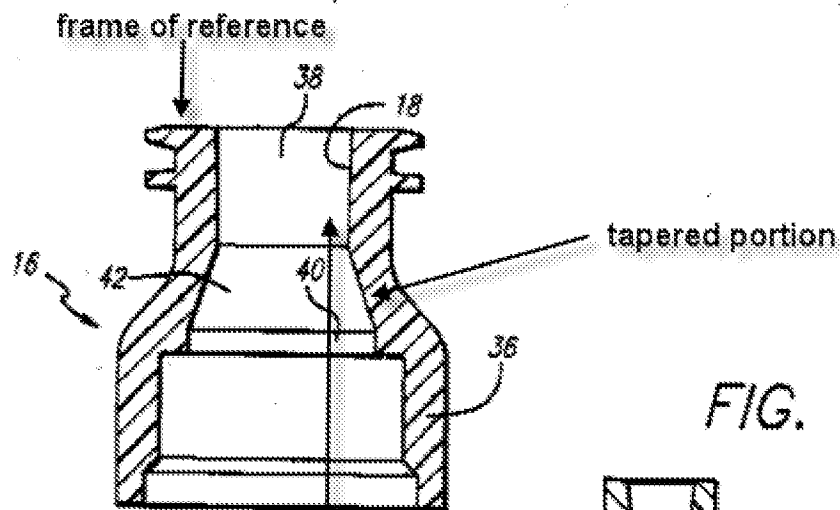


FIG. 6

frame of reference #2

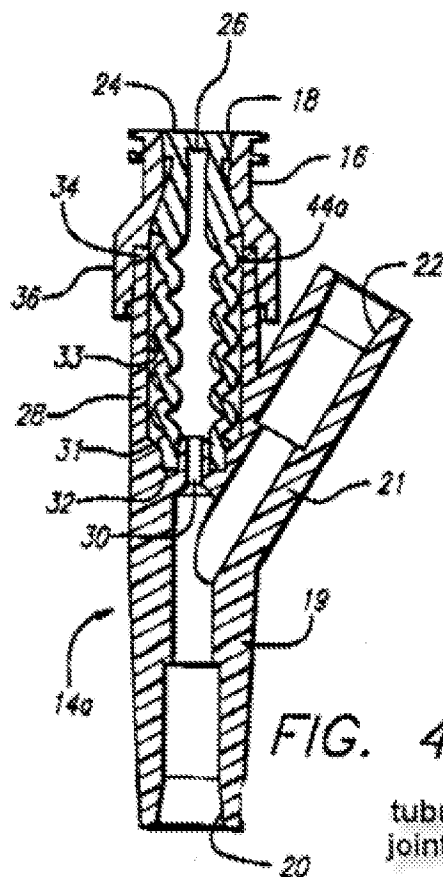
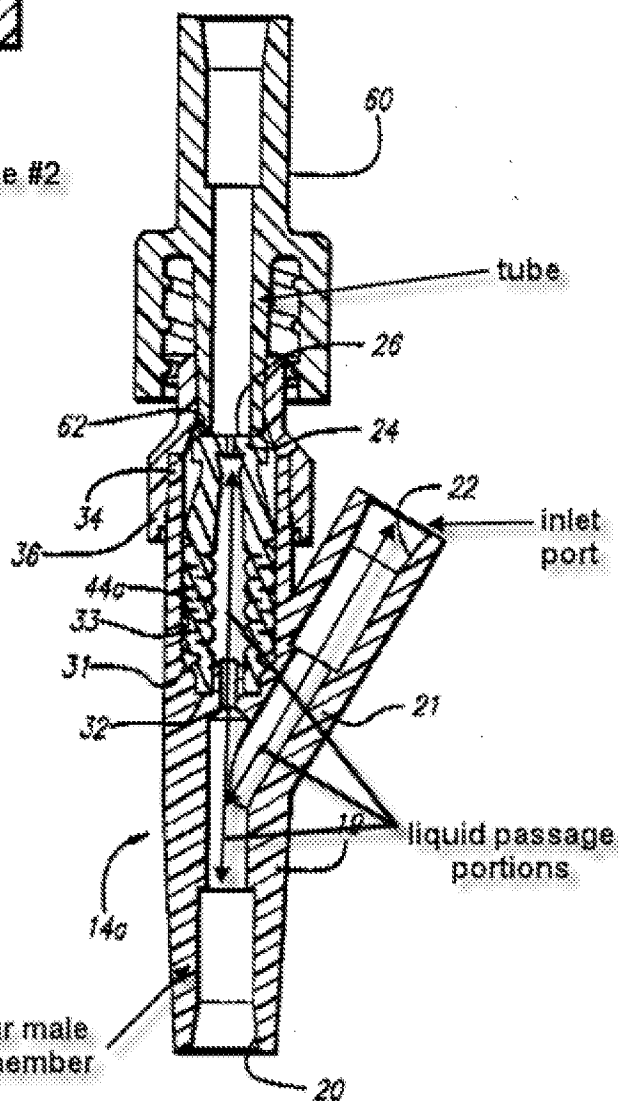


FIG. 4

tubular male  
joint member

FIG. 5



inlet  
port

liquid passage  
portions

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5,676,346

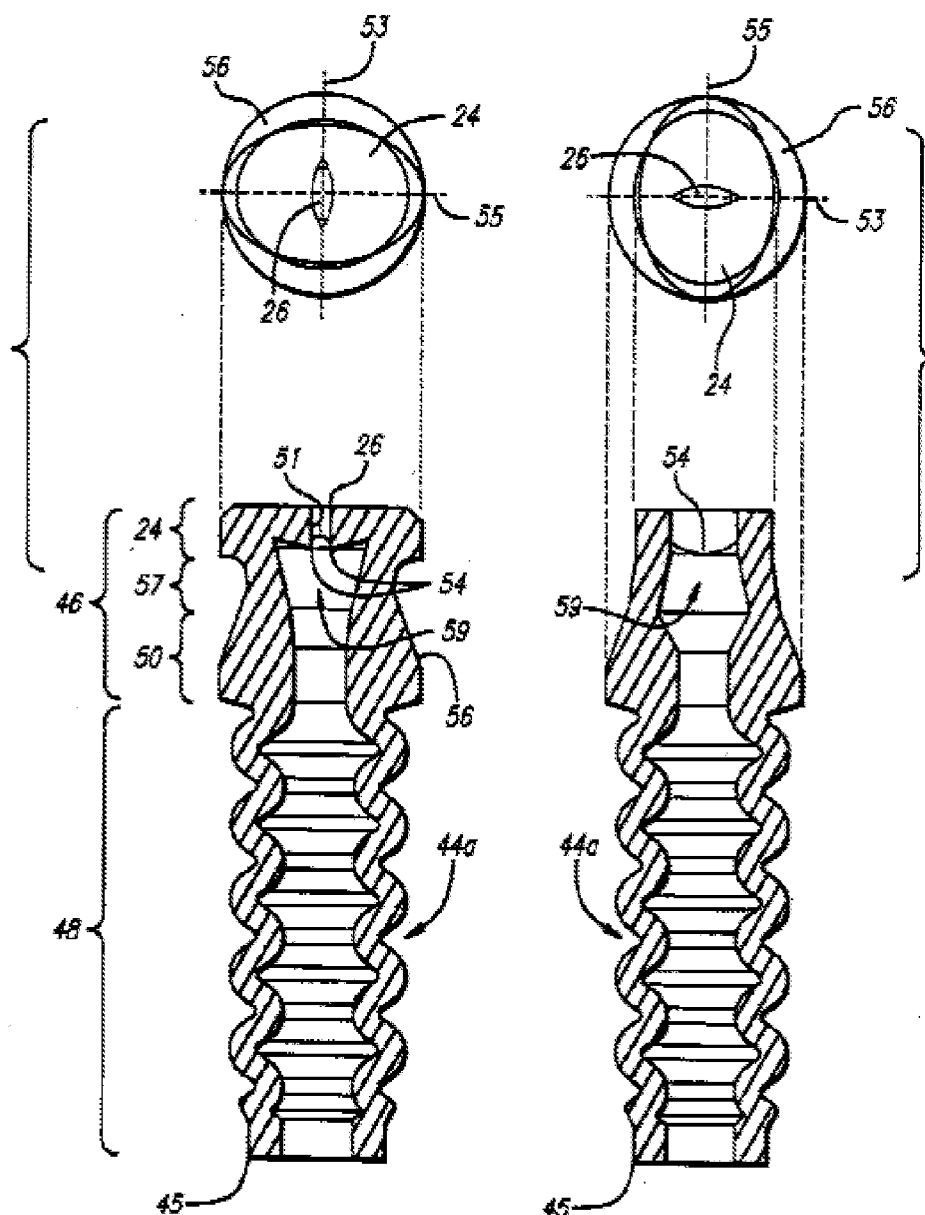


FIG. 7a

FIG. 7b

4. Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leinsing as applied to claims 7 and 8 above, and further in view of Bonaldo (US Patent 5,273,533) and Gereg (US Patent 4,449,663).

Leinsing discloses all the limitations of claims 7 and 8, but not the support member or valve opening action of claims 9 and 14. However, Bonaldo teaches a similar connector, wherein a support member 78 is disposed fixedly (in a radial direction) with respect to a joint member and supporting a head 66 of said valve body from a neck 64. To increase the durability of Liensing's connector, one of ordinary skill in the art at the time of invention would have supplemented it with Bonaldo's support member (on the exterior of the neck, as reversal of parts has been held to involve only routine skill in the art), to predictably obtain a connector wherein the force which is transferred to the valve during tube insertion would be carried by a stiff element, rather than by the thin pliable neck. Additionally, Gereg teaches a similar connector wherein the valve is opened through a compressive force. To ensure dependability of the Liensing-Bonaldo connector, one of ordinary skill in the art at the time of invention would have constructed the valve head and tapered portion of the valve housing as taught by Gereg, to predictably obtain a connector wherein a mechanical structure forces the valve open, rather than relying on a self-acting resilient valve member which might become obstructed or brittle over time. The resulting connector would have operated such that when a tube is connected to the female joint port the tube would press said valve body to move said valve body together with said support member into said tapered portion,

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so that said head of said valve body is pressed and deformed along the width of said slit directly by a tapered surface of said tapered portion, and the neck of said valve body is pressed and deformed along the width of said slit by said tapered surface indirectly through said support member, thereby opening said slit.

**U.S. Patent**

**Dec. 28, 1993**

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**5,273,533**

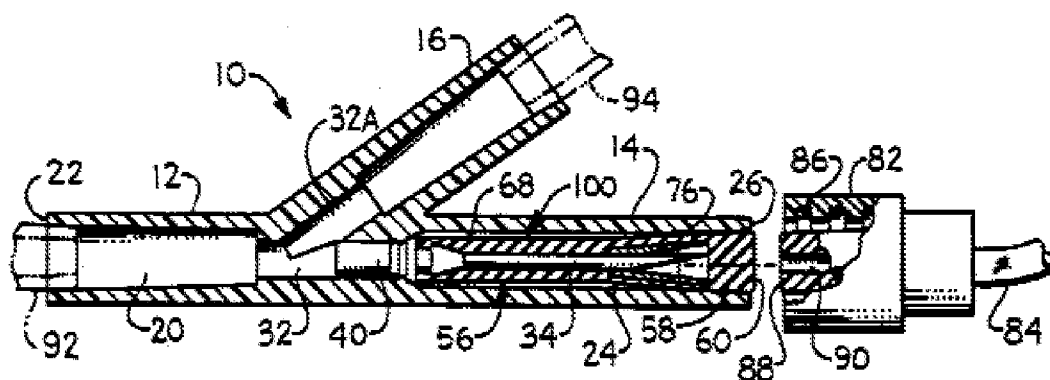


FIG. 5

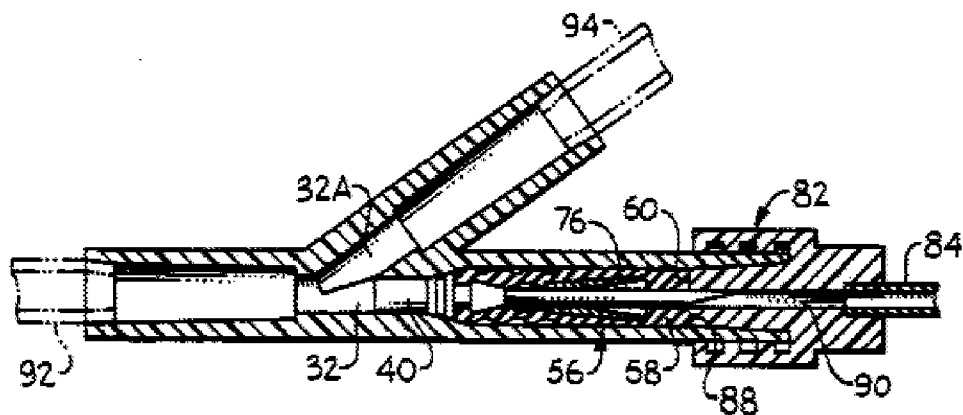


FIG. 6

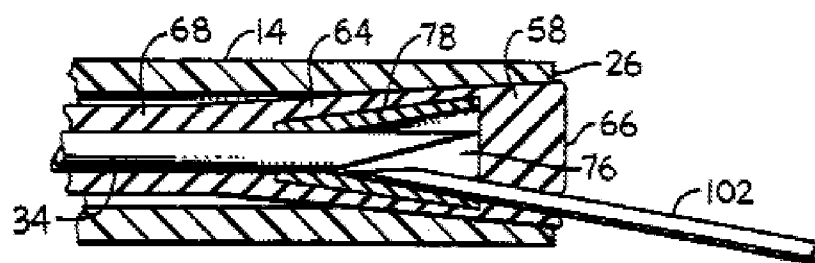
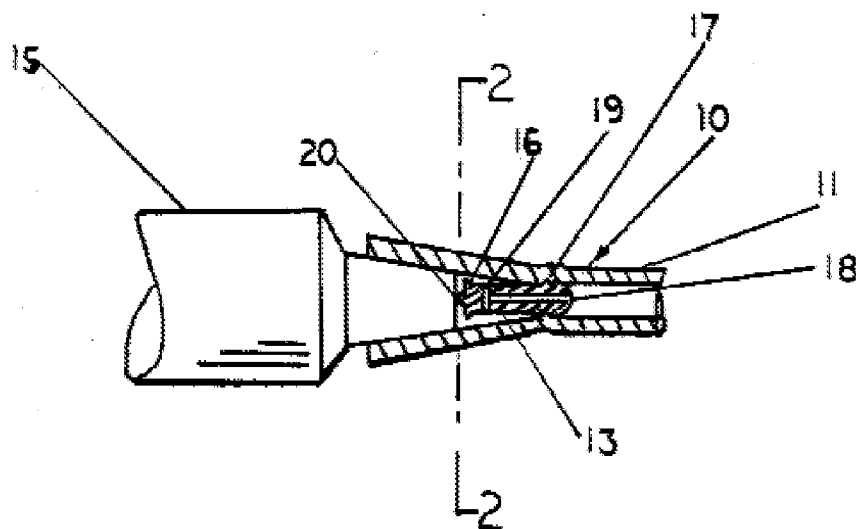


FIG. 7

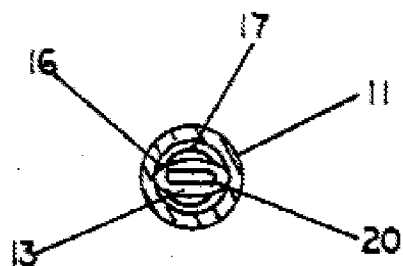
**Patent**

**May 22, 1984**

**4,449,693**



**FIG. 1**



**FIG. 2**

***Allowable Subject Matter***

5. Claims 10 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM M. MCCALISTER whose telephone number is (571)270-1869. The examiner can normally be reached on M-F, alt. Fridays off, hours 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Isabella can be reached on (571) 272-4749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

William McCalister  
Patent Examiner

/DMITRY SUHOL/  
Primary Examiner, Art Unit 3725

2/12/2008